A Dao of Web Design

by **John Allsopp** · April 07, 2000

Published in Accessibility, CSS, Layout & Grids, Typography & Web Fonts

What Zen was to the 70's (most famously with motorcycle maintenance), the *Tao Te Ching* was to the 90's. From Piglet and Pooh to Physics and back, many have sought sense in applying the *Tao Te Ching* to something (the *Tao of Physics*), or something to the *Tao Te Ching* (the *Tao of Pooh*). It can be a cheap trick, but lately it has struck me that there is more than a little to be understood about web design by looking through the prism of the Tao.

Article Continues Below

5 Comments

Become a patron

Translations

Russian

French

A Book Apart:
Brief books for people who make websites.

Daoism is a philosophy, like Buddhism, a way of living, of being in the world, which stems from a text of great antiquity, the *Tao Te Ching*, whose 81 "chapters" enigmatically sweep across human experience, but with a strong common theme, that of harmony.

For the last couple of years, for better or worse, my life has revolved more than a little around style sheets. I write software, tutorials, and guides for them; I've answered too many questions to count about them on newsgroups and via email; I've fought for their adoption with The Web Standards Project. And slowly I've come to understand web design entirely differently because of them, and to see a strong association between design and the Tao.

What I sense is a real tension between the web *as we know it*, and the web *as it would be*. It's the tension between an existing medium, the printed page, and its child, the web. And it's time to really understand the relationship between the parent and the child, and to let the child go its own way in the world.

Same old new medium?

> Well established hierarchies are not easily uprooted;
> Closely held beliefs are not easily released;
> So ritual enthralls generation after generation.
>
> *Tao Te Ching; 38 Ritual*

If you've never watched early television programs, it's instructive viewing. Television was at that time often referred to as "radio with pictures," and that's a pretty accurate description. Much of television followed the format of popular radio at that time. Indeed programs like the Tonight Show, with its variants found on virtually every channel in the world (featuring a band, the talk to the camera host, and seated guests), or the news, with the suited sober news reader, remain as traces of the medium television grew out of. A palimpsest of media past.

Think too of the first music videos (a few of us might be at least that old). Essentially the band miming themselves playing a song. Riveting.

When a new medium borrows from an existing one, some of what it borrows makes sense, but much of the borrowing is thoughtless, "ritual," and often constrains the new medium. Over time, the new medium develops its own conventions, throwing off existing conventions that don't make sense.

If you ever get the chance to watch early television drama you'll find a strong example of this. Because radio required a voice-over to describe what listeners *couldn't* see, early television drama often featured a voice over, describing what viewers *could*. It's a simple but striking example of what happens when a new medium develops out of an existing one.

The web is a new medium, although it has emerged from the medium of printing, whose skills, design language and conventions strongly influence it. Yet it is often *too* shaped by that from which it sprang. "Killer Web Sites" are usually those which tame the wildness of the web, constraining pages as if they were made of paper – Desktop Publishing for the Web. This conservatism is natural, "closely held beliefs are not easily released," but it is time to move on, to embrace the web as its own medium. It's time to throw out the rituals of the printed page, and to engage the medium of the web and its own nature.

This is not for a moment to say we should abandon the wisdom of hundreds of years of printing and thousands of years of writing. But we need to understand which of these

lessons are appropriate for the web, and which mere rituals.

Controlling web pages

> [The Sage]
>
> … accepts the ebb and flow of things,
> Nurtures them, but does not own them
>
> *Tao Te Ching; 2 Abstraction*

Spend some time on web design newgroups or mailing lists, and you'll find some common words and ideas repeated time after time. Question after question, of course, is "how do I?". But beneath questions like "how do I make my pages look the same on every platform" and "how can I make my fonts appear identical on the Macintosh and Windows" is an underlying question – "how do I control the user's browser?" Indeed, the word *control* turns up with surprising frequency.

Underpinning all this is the belief that designers are controllers (think about the implications of the term "pixel mechanic"). Designers want to override the wishes of users, and the choices that they have made about their viewing experience (by "fixing" font size, for instance). Designers want to second guess platform differences, caused by different logical resolutions (for instance the Macintosh's 72dpi, versus the standard Windows 96dpi). Designers are all-knowing, and will not tolerate anything less than a rendering on every browser that is pixel perfect with the rendering on their own machine.

Of course, this exaggerates the case, but not greatly. A very strong example of this is the often expressed disappointment of developers when they learn that style sheets are not "DTP for the web." And if you are a Mac user, you will be acutely aware of just how many really major sites abuse style sheets to make their pages illegible. Chances are they are

using points as a measure of font size. Underlying this choice is the "designer is controller" philosophy.

Where does this idea come from? I believe it flows from the medium of print. In print the designer *is* god. An enormous industry has emerged from WYSIWYG, and many of the web's designers are grounded in the beliefs and practices, the ritual of that medium. As designers we need to rethink this role, to abandon control, and seek a new relationship with the page.

Why does it matter?

> A newborn is soft and tender,
> A crone, hard and stiff.
> Plants and animals, in life, are supple and succulent;
> In death, withered and dry.
> So softness and tenderness are attributes of life,
> And hardness and stiffness, attributes of death.
>
> *Tao Te Ching; 76 Flexibility*

Perhaps the inability to "control" a page is a limitation, a bug of the web. When we come from the WYSIWYG world, our initial instinct is to think so. I admit that it was my first response, and a belief that was a long time in going. But I no longer feel that it is a limitation, I see it as a strength of a new medium.

Let's look at this through the other end of the microscope. The fact we can control a paper page is really a limitation of that medium. You can think – we can fix the size of text – or you can think – the size of text is unalterable. You can think – the dimensions of a page can be controlled – or – the dimensions of a page can't be altered. These are simply facts of the medium.

And they aren't necessarily good facts, especially for the reader. If the reader's eye sight isn't that of a well sighted person, chances are the choice the designer made is too small to comfortably read without some kind of magnification. If the reader is in a confined space, a train to work, an airplane, the broadsheet newspaper is too large. And there is little the reader can do about this.

The control which designers know in the print medium, and often desire in the web medium, is simply a function of the limitation of the printed page. We should embrace the fact that the web doesn't have the same constraints, and design for this flexibility. But first, we must "accept the ebb and flow of things."

Adaptability is accessibility

> The best of man is like water,
>
> Which benefits all things, and does not contend with them,
>
> Which flows in places that others disdain,
>
> Where it is in harmony with the Way.

<div align="center">*Tao Te Ching; 8 Water*</div>

There are those who think that dao is fatalistic. A simplistic reading is that one should wander, without plan, allowing for things to happen and to respond to them. I think of it as saying we should not be fixed in our outlook, with goals far ahead, rather we should be adaptable, not fixed in our views or direction.

> As observing detail is clarity,
>
> So maintaining flexibility is strength;
>
> Use the light but shed no light,
>
> So that you do yourself no harm,
>
> But embrace clarity.

<div align="center">*Tao Te Ching; 52 Clarity*</div>

The flexibility I've talked about so far I think of as "adaptability." Everything I've said so far could be summarized as: *make pages which are adaptable*. Make pages which are accessible, regardless of the browser, platform or screen that your reader chooses or must use to access your pages. This means pages which are legible regardless of screen resolution or size, or number of colors (and remember too that pages may be printed, or read aloud by reading software, or read using braille browsers). This means pages which adapt to the needs of a reader, whose eyesight is less than perfect, and who wishes to read pages with a very large font size.

Designing adaptable pages is designing accessible pages. And perhaps the great promise of the web, far from fulfilled as yet, is accessibility, regardless of difficulties, to information. It's an important belief of the World Wide Web Consortium, and is becoming an imperative of web design, as web pages will be required by law to provide universal access, just as building codes around the world require access to buildings.

It sounds an impossibility, designing the universal page. Perhaps now it remains an aspiration, with browsers so broken, and many of the devices through which we will access the web in their infancy, or not yet born. But there is a lot we can do now which will set the foundations for pages which adapt to the users wishes and needs, and so will be accessible.

The Way

> The Way is shaped by use,
> But then the shape is lost.
> Do not hold fast to shapes
> But let sensation flow into the world
> As a river courses down to the sea.
>
> *Tao Te Ching; 32 Shapes*

So what can be done to design for adaptability, and so accessibility? Firstly, there are a couple of ways of thinking which might be helpful. Then I have some practical suggestions

about steps you can take to avoid making your pages inaccessible.

Firstly, think about what your pages do, not what they look like. Let your design flow from the services which they will provide to your users, rather than from some overarching idea of what you want pages to look like. Let form follow function, rather than trying to take a particular design and make it "work."

A cornerstone of this idea is to separate the content and its appearance. You've probably heard this a hundred times, but it is perhaps the most important step you can take. Let's look at a simple example. On a page there is some text which is italicized. Why is it italicized? It might be for emphasis. It might be a citation. It might be a foreign word used in English. In traditional publishing, the form follows from function. The advantage of web publishing is we can make explicit what is implicit in the appearance on paper. If the reason for italics is emphasis, why mark up your page with the `<i>` element? Use the `<em>` element, and so browsers other than PC based web browsers can handle the element appropriately.

On the larger scale, don't use HTML for presentation. No `<font>` or `<b>`, `<i>` and other presentational elements. Where HTML provides an appropriate element, use it. Where it doesn't, use classes. And of course, use style sheets for your presentational information. It's time to look to the future, not cling to the past.

If you use style sheets properly, to suggest the appearance of a page, not to control the appearance of a page, and you don't *rely* on your style sheet to convey information, then your pages will "work" fine in any browser, past or future. Browsers which don't support style sheets simply present pages that look a little on the plain side. Our biggest concern is browsers which have buggy style sheets support. Today this is an issue. Not too long from now, it won't be much of an issue. For now, you can limit yourself to a subset of CSS which is well enough supported, and still have more presentational effect than using presentational HTML. I've written quite a bit about this elsewhere, so I won't repeat myself here.

In practical terms, there are some things you should and some things you shouldn't do when designing style sheets that will impact on the adaptability of your pages. Above all, don't rely on any aspect of style sheets to work in order for a page to be accessible. Absolute units, like pixels and points are to be avoided (if that comes as a surprise, read on), and color needs to be used carefully, and never relied on.

FONTS

Typically, a Windows, Macintosh, or other system will have only a handful of fonts installed. There is little overlap between the default installed fonts on these various systems. Already with many browsers, and increasingly in the future, readers will be able to decide on the fonts they want to view web pages with. With CSS, you can suggest a number of fonts, and cover as many bases as possible. But don't rely on a font being available regardless of how common it is.

More important still is font size. You may be aware that the same font, at the same point size on a Macintosh "looks smaller" than on most Windows machines. In a nutshell, this is because the "logical resolution" of a Macintosh is 72dpi, while the Windows default is 96dpi. The implications of this are significant. Firstly, it guarantees that it is essentially impossible to have text look identical on Macintoshes and Windows based systems. But if you embrace the adaptability philosophy *it doesn't matter*.

What? If you are concerned about *exactly how* a web page appears this is a sign that you are still aren't thinking about adaptive pages. One of the most significant accessibility issues is font size. Small fonts are more difficult to read. For those of us with good eyesight, it can come as a shock that a significant percentage of the population has trouble reading anything below 14 point Times *on paper*. Screens are less readable than paper, because of their lower resolution.

Does that mean the minimum point size we should use is 14 pts? That doesn't help those whose sight is even less strong. So what is the minimum point size we should use? None. Don't use points. This allows readers to choose the font size which suits them. The same

goes even for pixels. Because of logical resolution differences, a pixel on one platform is not a pixel on another.

You can still suggest larger font sizes for headings and other elements. CSS provides several ways of suggesting the size of text in such a way as to aid adaptability. We'll look at just one to get an idea.

With CSS you can specify font size as a percentage of the font size of a parent element. For example, headings are inside the BODY of the page. If you don't set a size for the text in the BODY, then the text of the BODY will be the size that the reader has chosen as their default size. Already we are aiding adaptability of our page, simply by doing nothing!

You might say "but the text looks too big" if I just leave it like that. Make it smaller then. But *in your browser*. And your readers will then have the option to make it bigger or smaller in their browsers too, depending on their tastes, or their needs.

We can make headings and other elements stand out using font size by specifying that headings of level 1 should be say 30% larger than the body text, level 2 should be 25% larger, and so on. Now, regardless of the size that the user chooses for their main text, headings will be scaled to be proportionally bigger than the main text. Similarly text can be scaled to be smaller than the body text, however, this can give rise to situations where the text can be illegibly small, so use with caution.

We've done very little really, just avoided using absolute font sizes, and used proportional sizes for headings, and we've already made our pages much more adaptable and accessible.

LAYOUTS

Margins, page widths and indentation are all aspects of page design which can aid readability. The web presents difficulties for the designer with each of these. Browser windows can be resized, thereby changing the page size. Different web devices (web TV,

high resolution monitors, PDAs) have different minimum and maximum window sizes. As with fixed font sizes, fixed page layout can lead to accessbility problems on the web.

As with fonts, layout aspects of a page can be designed using percentages to create adaptable pages. Margins can be specified as a percentage of the width of the element which contains them.

Using percentages (or other relative values) to specify page layout in CSS automatically creates adaptive pages. As browser windows widen and narrow, the layout of an element adapts to maintain the same proportions, and so the whole page layout adapts. Readers can choose the window size they find appropriate to their needs.

Margins, text indentation and other layout aspects can also be specified in relation to the size of the text they contain, using the `<em>` unit for specifying margins, text indentation and other layout aspects. If you specify

```
p   {margin-left: 1.5em}
```

you are saying that the left margin of paragraphs should be 1.5 times the height of the font of that paragraph. So, when a user adjusts their font size to make a page more legible, the margin increases proportionally, and if they adjust it to make it smaller, the margin adapts again.

COLORS

The web is by and large a more colorful medium than the printed page. Color is cheaper on the web. Color can be ornamental, can help to establish a visual identity, and can have practical value (red might draw attention to important information). But color poses difficulties to accessibility as well.

Did you know that in many countries (if not all) people with red green color blindness are unable to obtain an aircraft pilot's license? That is, regardless of any other ability, because

warning information is almost invariably conveyed using red for danger and green for safety. It's a shame that warning lights aren't simply adaptable.

Do your web pages exclude people in a similar way? It would be a shame, as in the near future most web browsers will provide simple ways for readers to adjust the color of elements on a web page, via user style sheets, which can override your style sheets. (You can do this now with IE5 Macintosh edition.)

How to avoid these problems? Use style sheets, rather than the HTML `<em>` element. And avoid relying on color combinations to alone convey meaning.

The Journey

> Yet a tree broader than a man can embrace is born of a tiny shoot;
> A dam greater than a river can overflow starts with a clod of earth;
> A journey of a thousand miles begins at the spot under one's feet.
>
> *Tao Te Ching; 64a. Care at the Beginning*

Changing our ways of thinking and acting isn't easy. "Closely held beliefs are not easily released." But I've come slowly to realize that much of what I took for granted needed to be reassessed. Judging by what I see and read and the conversations I've had, the email I've read over the last couple of years, many hold these beliefs closely, and need to rethink them too.

Now is the time for the medium of the web to outgrow its origins in the printed page. Not to abandon so much wisdom and experience, but to also chart its own course, where appropriate.

The web's greatest strength, I believe, is often seen as a limitation, as a defect. It is the nature of the web to be flexible, and it should be our role as designers and developers to embrace this flexibility, and produce pages which, by being flexible, are accessible to all.

The journey begins by letting go of control, and becoming flexible.

Tao Te Ching quotes from the GNL's not Lao Tao Te Ching Copyright © 1992, 1993, 1994, 1995 Peter A. Merel.

Recently by John Allsopp
Semantics in HTML 5

The BBC's dropping of hCalendar because of accessibility and usability concerns demonstrates that we have pushed the semantic capability of HTML far beyond what it can handle. The need to clearly and unambiguously add rich, meaningful semantics to markup is a driving goal of the HTML 5 project. Yet HTML 5 has two problems: it is not backward compatible because its semantic elements will not work in 75% of our browsers; and it is not forward compatible because its semantics are not extensible. If "making up new elements" isn't the solution, what is?

Further reading about
Accessibility

Opportunities for AI in Accessibility

Microsoft's Accessibility Innovation Strategist discusses AI's potential for accessibility, emphasizing the need for responsible use and diverse teams to mitigate harm and promote inclusion for people with disabilities.

Designing Inclusive Content Models

You may not realize it, but your site might be actively discouraging user engagement because your content models are shaped by bias. Daniel Carter and Carra Martinez are here to help you to understand this phenomena and the steps you can take to address it.

About the Author

John Allsopp

John Allsopp is the co-founder of the Web Directions conference series, developer of many tools, and author of books and articles on web design and development. He still talks about the web @johnallsopp.

MORE FROM THIS AUTHOR

Semantics in HTML 5

Get our latest articles in your inbox. Sign up for email alerts.

5 Reader Comments

Pingback: Responsive Web Design: Where Do We Go From Here? — SitePoint

Pingback: Embracing The Flow Of The Web | Design For Functionality

Pingback: A rant following other rants – On the topic of web design

Pingback: Web Directions Weekly–the chocolate box edition - Web Directions

Pingback: Lire et relire les classiques du web - Nicolas Friedli

GOT SOMETHING TO SAY?

We have turned off comments, but you can see what folks had to say before we did so.

More from ALA

User Research Is Storytelling

by **Gerry Duffy**

At a time when budgets for user experience research seem to have reached an all-time low, how do we get stakeholders and executives alike invested in this crucial discipline? Gerry Duffy walks us through how the research we conduct is much like telling a compelling story, complete with a three-act narrative structure, character development, and conflict resolution—with a happy ending for researchers and stakeholders alike.

User Experience · May 30, 2024

To Ignite a Personalization Practice, Run this Prepersonalization Workshop

by **Colin Eagan**, **Jeffrey MacIntyre**

Looking to tailor your UX to your individual users' needs? Colin Eagan and Jeffrey MacIntyre have a workshop framework for you!

Content Strategy · April 16, 2024

The Wax and the Wane of the Web

by **Ste Grainer**

Ste Grainer takes a brief look at the history of the web, where we are now, and how we can shape its future.

State of the Web · February 29, 2024

Opportunities for AI in Accessibility

by **Aaron Gustafson**

In this article, Aaron Gustafson muses on some of the many ways we can—and should—harness the capabilities of AI to create a more accessible world.

Accessibility · February 07, 2024

I am a creative.

by **Jeffrey Zeldman**

A List Apart founder and web design OG Zeldman ponders the moments of inspiration, the hours of plodding, and the ultimate mystery at the heart of a creative career.

Career · January 29, 2024

About   **Authors**   **Masthead**   **Style Guide**   **Contact**   **Sponsorships**

Follow us: **RSS** · **Email** · **Facebook** · **Twitter**

A Book Apart
Brief books for people who design, write, and code. Bundle books and save!
Shop now ›

An Event Apart
Three days of design, code, and content for people who make websites.
See this year's schedule ›

Permissions & Copyright · **Privacy Policy** · **Fonts by Webtype**